

CLAIMS

I/WE CLAIM:

1. An apparatus for electrically connecting two closely positioned high voltage modules with little or no bend and without any loops in an electrical interconnecting coaxial cable, comprising:
 - a high voltage connector attached to at least a portion of the cable on at least one end of the cable;
 - a push through high voltage connector receptor within one module; and,
 - a disconnection mechanism within the one module adapted to move the high voltage connector and the at least a portion of cable to which the high voltage connector is attached through the connector receptor from a contact position to a housed position in a direction away from the other module to which high voltage connection is to be made.
2. The apparatus of claim 1 further comprising:
 - the high voltage connector receptor comprising:
 - an open cylindrical connector with a contacting surface contained on the interior wall of the cylindrical connector.
3. The apparatus of claim 1, further comprising:
 - an interlock mechanism in operative connection with the disconnection mechanism and adapted to provide an indication of the high voltage connector being in a position other than in the contact position relative to the connector receptor.
4. The apparatus of claim 2, further comprising:
 - an interlock mechanism in operative connection with the disconnection mechanism and adapted to provide an indication of the high voltage connector being in a position other than in the contact position relative to the connector receptor.
5. The apparatus of claim 3, further comprising:

an engaging mechanism engaging the cable and holding the cable in a fixed position relative to the disconnection mechanism as the high voltage connector moves between the contact position and the housed position.

5 6. The apparatus of claim 4, further comprising:

an engaging mechanism engaging the cable and holding the cable in a fixed position relative to the disconnection mechanism as the high voltage connector moves between the contact position and the housed position.

10 7. The apparatus of claim 1, further comprising:

a clamping mechanism in cooperative connection with the disconnection mechanism when the high voltage connector is in the contact position and cooperative with the clamping mechanism to prevent the high voltage connector from moving from the contact position.

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8. The apparatus of claim 2, further comprising:

a clamping mechanism in cooperative connection with the disconnection mechanism when the high voltage connector is in the contact position and cooperative with the disconnection mechanism to prevent the high voltage connector from moving from the contact position.

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9. The apparatus of claim 3, further comprising:

a clamping mechanism in cooperative connection with the disconnection mechanism when the high voltage connector is in the contact position and cooperative with the disconnection mechanism to prevent the high voltage connector from moving from the contact position.

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10. The apparatus of claim 4, further comprising:

a clamping mechanism in cooperative connection with the disconnection mechanism when the high voltage connector is in the contact position and

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cooperative with the disconnection mechanism to prevent the high voltage connector from moving from the contact position.

11. The apparatus of claim 5, further comprising:

- 5 a clamping mechanism in cooperative connection with the disconnection mechanism when the high voltage connector is in the contact position and cooperative with the disconnection mechanism to prevent the high voltage connector from moving from the contact position.

10 12. The apparatus of claim 6, further comprising:

 a clamping mechanism in cooperative connection with the disconnection mechanism when the high voltage connector is in the contact position and cooperative with the disconnection mechanism to prevent the high voltage connector from moving from the contact position.

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13. An apparatus for electrically connecting two closely positioned high voltage modules with little or no bend and without any loops in an electrical interconnecting coaxial cable, comprising:

- a high voltage connector attached to at least a portion of the cable on at least
20 one end of the cable;

 a push through high voltage connector receptor means within one module for connecting and disconnecting the high voltage connector to the module; and,

- a disconnection means within the one module for positioning the high voltage connector and the at least a portion of cable to which the high voltage
25 connector is attached in a housed position by moving the cable in a direction away from the other module to which high voltage connection is to be made.

14. The apparatus of claim 13 further comprising:

 the high voltage connector receptor comprising:

- 30 an open cylindrical connector with a contacting surface contained on the interior wall of the cylindrical connector.

15. The apparatus of claim 13, further comprising:

an interlock means for, in cooperation with the disconnection means,
providing an indication of the high voltage connector being in a position other than
5 in the contact position relative to the connector receptor.

16. The apparatus of claim 14, further comprising:

an interlock means for, in cooperation with the disconnection means,
providing an indication of the high voltage connector being in a position other than
10 in the contact position relative to the connector receptor.

17. The apparatus of claim 15, further comprising:

an engaging means for engaging the cable and holding the cable in a fixed
position relative to the disconnection means as the high voltage connector moves
15 between the contact position and the housed position.

18. The apparatus of claim 16, further comprising:

an engaging means for engaging the cable and holding the cable in a fixed
position relative to the disconnection means as the high voltage connector moves
20 between the contact position and the housed position.

19. The apparatus of claim 13, further comprising:

a clamping means in cooperative connection with the disconnection means
when the high voltage connector is in the contact position and cooperative with the
25 disconnection means to prevent the high voltage connector from moving from the
contact position.

20. The apparatus of claim 14, further comprising:

a clamping means in cooperative connection with the disconnection means
30 when the high voltage connector is in the contact position and cooperative with the

disconnection means to prevent the high voltage connector from moving from the contact position.

21. The apparatus of claim 15, further comprising:

- 5 a clamping means in cooperative connection with the disconnection means when the high voltage connector is in the contact position and cooperative with the disconnection means to prevent the high voltage connector from moving from the contact position.

10 22. The apparatus of claim 16, further comprising:

 a clamping means in cooperative connection with the disconnection means when the high voltage connector is in the contact position and cooperative with the disconnection means to prevent the high voltage connector from moving from the contact position.

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23. The apparatus of claim 17, further comprising:

 a clamping means in cooperative connection with the disconnection means when the high voltage connector is in the contact position and cooperative with the disconnection means to prevent the high voltage connector from moving from the contact position.

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24. The apparatus of claim 17, further comprising:

 a clamping means in cooperative connection with the disconnection means when the high voltage connector is in the contact position and cooperative with the disconnection means to prevent the high voltage connector from moving from the contact position.

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25. A method for electrically connecting two closely positioned high voltage modules with little or no bend and without any loops in an electrical interconnecting coaxial cable, comprising:

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attaching a high voltage connector to at least a portion of the cable on at least one end of the cable;

providing a push through high voltage connector receptor within one module for connecting and disconnecting the high voltage connector to the module; and,

- 5 positioning the high voltage connector and the at least a portion of cable to which the high voltage connector is attached in a housed position by moving the cable through the push through high voltage connector receptor in a direction away from the other module to which high voltage connection is to be made.

- 10 26. The method of claim 25 further comprising:

the high voltage connector receptor comprising:

an open cylindrical connector with a contacting surface contained on the interior wall of the cylindrical connector.

- 15 27. The method of claim 25, further comprising:

providing an indication of the high voltage connector being in a position other than in the contact position relative to the connector receptor to prevent energizing the cable when the connector is in other than the contact position.

- 20 28. The method of claim 26, further comprising:

providing an indication of the high voltage connector being in a position other than in the contact position relative to the connector receptor to prevent energizing the cable when the connector is in other than the contact position.

- 25 29. The method of claim 27, further comprising:

providing an indication of the high voltage connector being in a position other than in the contact position relative to the connector receptor to prevent energizing the cable when the connector is in other than the contact position.

- 30 30. The method of claim 28, further comprising:

providing an indication of the high voltage connector being in a position other than in the contact position relative to the connector receptor to prevent energizing the cable when the connector is in other than the contact position.

5 31. The apparatus of claim 25, further comprising:

clamping the disconnection means to prevent the high voltage connector from moving from the contact position.

32. The apparatus of claim 26, further comprising:

10 clamping the disconnection means to prevent the high voltage connector from moving from the contact position.

33. The apparatus of claim 27, further comprising:

15 clamping the disconnection means to prevent the high voltage connector from moving from the contact position.

34. The apparatus of claim 28, further comprising:

20 clamping the disconnection means to prevent the high voltage connector from moving from the contact position.

35. The apparatus of claim 29, further comprising:

clamping the disconnection means to prevent the high voltage connector from moving from the contact position.

25 36. The apparatus of claim 29, further comprising:

clamping the disconnection means to prevent the high voltage connector from moving from the contact position.

30 37. An apparatus for electrically connecting a first and a second closely positioned high voltage module with little or no bend and without any loops in an electrical interconnecting coaxial cable, comprising:

a first high voltage connector attached to at least a portion of the cable on one end of the cable and a second high voltage connector attached to at least a portion of the cable at a second end of the cable;

a push through high voltage connector receptor within the first module;

5 a disconnection mechanism within the first module adapted to move the high voltage connector and the at least a portion of cable to which the high voltage connector is attached through the connector receptor from a contact position to a housed position in a direction away from the other module to which high voltage connection is to be made; and

10 a retractable connector within the second module moveable toward the first module from a retracted position into an extended position, in which extended position electrical contact is made with the second high voltage connector.

38. An apparatus for electrically connecting a first and a second closely positioned
15 high voltage module with little or no bend and without any loops in an electrical interconnecting coaxial cable, comprising:

a first and a second high voltage connector attached to at least a portion of the cable on each end of the cable;

20 a push through high voltage connector receptor means within the first module for connecting and disconnecting the high voltage connector to the first module;

a disconnection means within the first module for positioning the high voltage connector and the at least a portion of cable to which the high voltage connector is attached in a housed position by moving the cable in a direction away
25 from the other module to which high voltage connection is to be made; and,

a retractable connector means within the second module moveable toward the first module from a retracted position into an extended position, for making electrical contact with the second high voltage connector.

39. A method for electrically connecting a first and a second closely positioned high voltage module with little or no bend and without any loops in an electrical interconnecting coaxial cable, comprising:
- placing a first and a second high voltage connector on at least a portion of the
 - 5 cable on each end of the cable;
 - a push through high voltage connector receptor means within the first module for connecting and disconnecting the high voltage connector to the first module;
 - a disconnection means within the first module for positioning the high
 - 10 voltage connector and the at least a portion of cable to which the high voltage connector is attached in a housed position by moving the cable in a direction away from the other module to which high voltage connection is to be made; and,
 - a retractable connector means within the second module moveable toward the first module from a retracted position into an extended position, for making
 - 15 electrical contact with the second high voltage connector.